

REMARKS

This Amendment is responsive to the Office Action dated July 30, 2003. Claims 27 - 74 are pending in this application and have been rejected. Applicant respectfully requests reexamination in light of the amendment and following remarks. These remarks follow the order of the Office Action beginning at page thereof.

Claim Objections

Claims 29 - 31 have been objected to. In response, Applicant has canceled these claims.

Claim Rejections - 35 USC § 103

Claims 27 - 32, 34 - 36, 40, 42, 43, 48 - 52, 54 - 56, 60, 62, 63 and 68 - 70 and 72 have been rejected under 35 USC § 103(a) as being unpatentable over Carroll '893 in view of Moskowitz '222.

Still further, claims 33, 37, 53 and 57 have been rejected as being unpatentable over Carroll in view of Moskowitz and Auerback '343.

Still further, claims 38, 39, 41, 58, 59, 61, 71, 73 and 74 have been rejected as unpatentable over Carroll in view of Moskowitz in view of Kip '190.

Claims 44 and 64 are rejected as being unpatentable over Carroll in view of Moskowitz in view of Turner '305.

Claims 45 and 65 are rejected as unpatentable over Carroll in view of Moskowitz et al., and Roth '117.

Claims 46, 47, 66 and 67 are rejected under 35 USC § 103(a) as unpatentable over Carroll in view of Moskowitz in view of Schoenian '106.

The Examiner's fundamental rejection is that all claims are unpatentable over Carroll '893 in view of Moskowitz '222 or these two patents in combination with a third reference as outlined above.

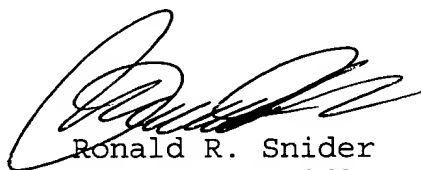
The Examiner reasons that Carroll discloses a claimed identification tags having all elements except for the antenna in the form of a claimed dipole antenna (see page 3, line 7). The Examiner further reasons that while Carroll discloses a looped antenna, Moskowitz teaches the known alternative use of dipole (e.g. dipole and folded dipole) and looped antenna's on a tag (column 4, lines 29 - 31; column 3, lines 40 - 41 and 55 - 56 and Figs. 4 - 6 and 9).

The Examiner then reasons that it would be obvious to use the alternative of a dipole or looped antenna with the Carroll teaching.

Applicant respectfully traverses the proposition that a mere substitution of antennas in Carroll is obvious or, for that matter, even possible. Attached to this response is a Declaration of Tümay Tümer (the inventor in this application) which explains why it is not possible to merely substitute dipole antennas into the Carroll patent because the circuitry of the Carroll patent will not work to perform the claimed function if a different type of antenna is placed into Carroll. In the outstanding Office Action, the Examiner has argued only that it is obvious to change the antennas. However, the attached Declaration shows that if the antennas are merely switched, then the circuitry of Carroll will not be responsive and, therefore, the Carroll device with the substituted antennas will not work. The Examiner's rejection, therefore, leads to a combination which yields an unworkable device. Such a device cannot anticipate, and certainly cannot render obvious Applicant's invention which incorporates the necessary circuits in order to accommodate the claimed dipole antenna system.

In view of the foregoing, it is respectfully submitted that the application is now in condition for allowance, and early action in accordance thereof is requested. In the event there is any reason why the application cannot be allowed in this current condition, it is respectfully requested that the Examiner contact the undersigned at the number listed below to resolve any problems by Interview or Examiner's Amendment.

Respectfully submitted,



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Date: December 19, 2003

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RRS/bam

S/N: 09/396,352

12/17/03

Docket No.: NOVA-002-USAP

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Tümay TÜRER

Serial No.: 09/396,352

Filed: September 14, 1999

For: TAG HAVING A SEMICONDUCTOR CHIP AND METHOD OF ATTACHMENT TO ARTICLE



Art Unit: 2736

Examiner: HUANG, S

DECLARATION

My name is Tümay O. Tümer and I am the inventor of the above-captioned application.

The antenna circuit in the above-captioned application is designed and tuned to drive dipole antennas. Depending on the signal level at the DA output, one of the two receive oscillators shown in Figure 2 is then enabled and selected. These oscillators are tuned to a frequency in the range of 1 MHz to 20 GHz. They are designed to drive a dipole antenna as a half-wave and/or quarter wave reflector. The frequency will be picked up by the stationary receiver as an intensity modulation of the backscatter by the antenna. This eliminates the need for a power-consuming active transmitter on the chip. The oscillator that provides the clock during data transmission from the chip is shown in Figure 7. It is a gated ring oscillator whose period is extended beyond the propagation delay of its three gates by bridging the two-input NAND gate with a 3 pF capacitor. The resulting frequency is still more than twice as

high as the 100 KHz of the input signal. This means that the transmission can be completed before the read control circuit is reset by the next sequence of 16 zeros. Consequently, the timing of the data transmission to the chip can be simplified by not having to wait for the transmission from the chip to complete. The power input antenna design was optimized for 16 GHz with an effective dielectric constant of 4.0 for the silicon dioxide. The antenna was expected to have sufficient sensitivity for 10 to 15 GHz microwaves to power the MicroTAG chip. The MicroTAG chip in the application contains two antennas placed on opposite sides of the chip similar to the first prototype described above. One of them receives the microwave signal from the interrogator which is used for both to power the chip by storing charge onto a large on-chip capacitance bank and to transmit data to the chip. The second antenna is used to transmit the chip's response to any data requests from the interrogator. Rather than using an (power-intensive) active transmitter for this purpose, this antenna is set up in the design to reflect a continuous wave from the interrogator with varying efficiency; the data from the chip is encoded in the pattern of the efficiency variation. When transmitting data from the chip to the interrogator, the information (described in the specification) will again be

encoded in a pattern formed by modulating the carrier wave with two different frequencies. In this case, the application's MicroTag circuit chops the reflected wave with the respective frequency. On the receiver side, the incoming signal will then be sent through a filter that detects only the slow variation of the signal, but not the high carrier frequency. This will be followed by a pair of high- and low-pass filters, tuned midway between the two modulation frequencies, and suitable logic circuitry to decode the pattern sent by the chip. All these are tuned for dipole antennas and will work correctly with a dipole antenna.

The Carroll patent uses a long and thin single pole antenna wrapped around the chip. They use a rectifier system (22) and other circuits such as Divide/timing logic and data generator (30), which will not work to perform the claimed function if they are placed on the MicroTag chip of this application. Also, Applicant's circuitry, if placed on their chip, will not work to produce the claimed results.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information I have and are believed to be true; and further that these statements

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were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application of any patent issued thereon.

T. Tümer  
Signature

Tümay O. Tümer  
Name

12/17/2003  
Date